The
Journal of
Supercomputing
Volume 4, 1990

The Use of Intermediate Memories for Low-Latency Memory Access in Supercomputer Scalar Units, Gurinder S. Sohi and Wei-Chung Hsu 5

FFTs in External or Hierarchical Memory, David H. Bailey 23

Cedar Fortran and Other Vector and Parallel Fortran Dialects, Mark D. Guzzi, David A. Padua, Jay Hoeflinger and Duncan H. Lawrie 37

Compiling Techniques for First-Order Linear Recurrences on a Vector Computer, Yoshikazu Tanaka, Kyouko Iwasawa, Yukio Umetani and Shizuo Gotou 63

On the Use of Diagnostic Dependence-Analysis Tools in Parallel Programming: Experiences Using PTOOL, Leslie A. Henderson, Robert E. Hiromoto, Olaf M. Lubeck and Margaret L. Simmons 83

Limited Width Parallel Prefix Circuits, David A. Carlson and Binay Sugla ... 107

Benchmarking and Optimization of Scientific Codes on the CRAY X-MP, CRAY-2, and SCS-40 Vector Computers, Wayne Pfeiffer, Arnold Alagar, Anke Kamrath, Robert H. Leary, and Jack Rogers 131

Performance Comparison of the CRAY-2 and CRAY X-MP/416 Supercomputers, Margaret L. Simmons and Harvey J. Wasserman 153

Computing Hough Transforms on Hypercube Multicomputers, Sanjay Ranka and Sartaj Sahni 169

Systolic Arrays for Multidimensional Discrete Transforms, Weicheng Shen and A. Yavuz Oruç 201

On High-Speed Computing with a Programmable Linear Array, PeiZong Lee and Zvi M. Kedem 223

V-Pascal: An Automatic Vectorizing Compiler for Pascal with No Language Extensions, Takao Tsuda and Yoshitoshi Kunieda 251

Status and Prospects of the Computational Approach to High-Energy Physics, Clive F. Baillie, Desmond A. Johnston and Gregory W. Kilcup 277

Data Dependence and Program Restructuring, Michael Wolfe 321

Using Local Memory to Boost the Performance of FFT Algorithms on the CRAY-2 Supercomputer, David A. Carlson 345

Using Strassen's Algorithm to Accelerate the Solution of Linear Systems, David H. Bailey, King Lee and Horst D. Simon 357